

REMARKS

The last Office Action has been carefully considered.

It is noted that claims 1-7 are rejected under 35 U.S.C. 103 over the German patent document DE 44 31 865 in view of the U.S. patents to Jorn, et al and to Bloom, et al, Muller or Japanese reference JP 63-268,559.

Also, the drawings and the specification are objected to and the claims are rejected under 35 U.S.C. 112.

In connection with the Examiner's objection to the drawings and the specification, applicant submitted herewith a copy of the drawings with the proposed corrections, and corrected the specification.

In view of the Examiner's rejection of the claims under 35 U.S.C. 112, the claims have been amended as well.

It is therefore believed that the Examiner's grounds for the formal objections and rejections are therefore eliminated.

After carefully considering the Examiner's grounds for the rejection of the claims over the art, applicant has retained the claims substantially as they were with the exception of the above mentioned corrections in compliance with the Examiner's requirements.

Turning now to the prior art applied by the Examiner, in particular to the German reference DE 44 31865, it can be seen that this reference discloses a method of and a device for producing cast parts, in particular magnesium alloys, which however are not suitable for obtaining a stable protective gas atmosphere. This stable protective gas atmosphere with an overpressure of 0.5-0.3 bar is however a condition for the intended high quality series production of the die cast parts. Due to the forced reaction of the melt with oxygen in the method disclosed in this reference, the melt would be unsuitable.

The inventive method is performed inside a system which is closed from outside. For producing the required temperature difference of approximately 400°C between the upper melt and the tool, the retort is reduced downwardly and a heating spiral corresponding to the shape of the retort is arranged on this retort. The tool has a separate heating which holds the cast material at the temperature of approximately 200-300°C. In order to make possible a further cast without residues, in the inventive method, in

contrast to the method disclosed in the reference, a clear separating point is provided. Such a separation also is not required in the method disclosed in the reference, since there the quantity can be exactly dosed. In the practical performance in the method, however the dosing of a plurality of the required material quantities is necessary for avoiding air inclusions. This dosing can be performed only with the inventive method. With the arrangement of the heating spiral on the downwardly narrowing retort a control of the temperature difference is possible.

It is believed that the new features of the present invention which are now defined in claim 1 and the dependent claims are not disclosed in the above mentioned German reference.

The Japanese reference JP 63 26 85 59 does not disclose a manufacturing process, but instead a controllable valve device which can be used for a series production of die cast parts. This reference does not produce any temperature difference of the melt or a clean separation of the dosed materials. This reference also does not teach the new features of the present invention as defined in the claims.

The patent to Jom, et al. describes, in contrast to the applicant's method, an outwardly open system with gravity casting and sand molds. The

generation of an over pressure atmosphere is not possible. Magnesium or magnesium alloys can not be brought with this arrangement in metallic forms. This reference does not teach the new features of the present invention.

The patents to Bloom and Miller do not disclose manufacturing processes but instead optimize inductive heatings, in particular to produce a symmetrical casting stream. These references do not teach the new features of the present invention.

The U.S. patent to Nagan discloses a fine casting process with which for example an individual manufacture in a ceramic workshop is possible. For magnesium or magnesium alloys this method is not suitable. This reference does not teach the new features of the present invention.

The patent to Cook discloses, in contrast to the inventive die cast method, a gravity cast method. With the use of this method for the cast parts to be produced, the material properties are completely insufficient.

The gravity cast method disclosed in the patent to Hugo, et al is a so-called tilting cast method which is suitable for individual manufacture in ceramic workshops but not for filling of metallic permanent tools. In the

method of the reference Sand or Gypsum molds are utilized. This reference also does not teach the new features of the present invention as defined in the claims.

In view of the above presented remarks and amendments, it is believed that claim 1, the broadest claim on file, should be considered as patentably distinguishing over the art and should be allowed.

As for the dependent claims, these claims depend on claim 1, they share its presumably allowable features, and therefore it is respectfully submitted that they should be allowed as well.

The Examiner's attention is also respectfully directed to the features of claim 15 which substantially corresponds to claim 1 but in addition defines that the casting retort is conical and narrows toward the feed system. The features of this claim are also not disclosed in the references and can not be derived from them as a matter of obviousness.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 631-549-4700).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Michael J. Striker', with a long horizontal flourish extending to the right.

Michael J. Striker  
Attorney for Applicants  
Reg. No. 27233